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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/541,263

Applicant(s)

HOUSEY ET AL.

Examiner

Christina Borgeest

Art Unit

1649

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-26 is/are pending in the application.
- 4a) Of the above claim(s) 25 and 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CD/CD)
Paper No(s)/Mail Date 2/2009; 11/2009
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Newly submitted claims 25 and 26 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: It is noted that the original election was to methods of screening for small molecules that are activators or inhibitors of IRS2 function (see Requirement for Restriction filed 30 May 2008). New claims 25 and 26 are drawn to methods of screening for small molecules that are activators or inhibitors of IRS1 function. Had these claims been presented in the original claim set, they would have been considered a different invention and would have been placed in a different group, because the inventions represent different processes and multiple processes are not represented in the categories of invention considered to have unity of invention as set forth in 37 CFR 1.475. As stated in the Requirement for Restriction mailed 30 May 2008, 37 CFR 1.475 provides for the search and examination of a product and a process specially adapted for the manufacture of said product; a product and a process of use of said product; a product, a process specially adapted for the manufacture of the said product; and a use of the said product; a process and an apparatus or means specifically designed for carrying out the said process; a product, a process specially adapted for the manufacture of the said product, and an apparatus or means specifically designed for carrying out the said process.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 25 and 26 are withdrawn from

consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claims 16-24 are under consideration in the instant application.

Objections/Rejections Withdrawn

Claim Objections

The objection to claims 16 and 17 for informalities as set forth at p. 2 of the Office action mailed 24 February 2009 is withdrawn in response to Applicants' amendment to define the acronym IRS2.

Claim Rejections - 35 USC § 112, second paragraph

The rejection of claims 16 and 17 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention as set forth at p. 3 of the Office action mailed 24 February 2009 is withdrawn in response to Applicants' amendment. Specifically, claims 16 and 17 now have a step indicating how measuring the amount of IRS2 binding protein bound to IRS2 relates back to the goal recited in the claims.

New Rejections/Rejections Maintained

Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 16 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. There is no step describing how the characteristic of the small molecule identified in step b) was determined before carrying out the entire method. Specifically, the pertinent portion of claims 16 and 17 recite:

"b) causing the small molecule to come into contact with IRS2 or a complex comprising IRS2 and other cellular proteins, wherein said small molecule cannot bind to the non-IRS2 proteins in the absence of IRS2;"

It is noted that this limitation can be found in the instant specification at paragraph [0032].

By upregulation of IRS2 function is meant an increase in the amount of IRS2 protein within a cell or enhancing IRS2-mediated signal transduction by activators as defined herein. By activator or inhibitor of IRS2 is meant a small molecule that binds to IRS2 alone and activates or inhibits the signaling function of IRS2, or a small molecule that binds to a complex comprising IRS2 and other cellular proteins and wherein said small molecule cannot bind to the non-IRS2 proteins in the absence of IRS2.

It is clear from the discussion in the specification that the limitation is meant to define the activator of IRS2 that is identified by the claimed method. As such, there is gap in the steps between the portion of part b) of the claim that recites the small molecule that comes into contact with IRS2 or a complex comprising IRS2 and other cellular proteins, and the portion of part b) of the claim that recites "wherein said small molecule cannot

bind to the non-IRS2 proteins in the absence of IRS2.” How is this characteristic determined before carrying out the method? The claim encompasses a thought process whereby it is known in advance of carrying out the screening assay that the small molecule has the very characteristics sought by carrying out said screening assay. For the purposes of prior art, the “wherein” clause in part b) of claim 17 is interpreted as a result of carrying out the claimed method and not a limitation per se. Claims 18-24 are also rejected as they depend from claims 16 and 17.

Claim 18 recites the limitation “protein of interest”, and depends from claim 16. There is insufficient antecedent basis for this limitation in the claim since claim 16 does not recite the phrase “protein of interest.”

Claims 19-23 recites the limitation “host cell”, and depend either directly or ultimately from claim 16. There is insufficient antecedent basis for this limitation in the claim since claim 16 does not recite the phrase “host cell.”

Claim 21 is indefinite for several reasons. It is not known what is meant by the phrase “the host cell essentially does not produce the protein.” First, “the protein” that is “essentially” not produced is vague. It is not clear whether the protein refers to IRS2, IRS1, “other cellular proteins” or proteins involved in IRS2 signaling (for example, see Fig. 1). Second, claim 16, from which 21 depends, recites a test cell that **overproduces** IRS2 and a control cell which produces IRS2 at a lower level or not at

all, so if the host cell of claim 21 is intending to refer to the test cell of claim 16, then claim 21 does not make any sense since it requires a cell inapposite to the test cell of claim 16.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The rejection of claim 17 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,858,701 (issued 12 January 1999; on Applicants' 1449 form—hereafter “the '701 patent”) as set forth at pages 3-4 of the Office action mailed 24 February 2009 is maintained for reasons of record and the following.

The '701 patent teaches a two-phase method for evaluating a treatment for the ability of the treatment to inhibit or promote IRS2 metabolism, or to evaluate test compounds for use as therapeutic agents. The method includes: an in vitro phase in which the test compound is contacted with a cell which includes a reporter gene functionally linked to an IRS2 regulatory sequence (i.e., promoter), and detecting the modulation of the expression of the reporter gene (see column 7, lines 11-27). In other words, the '701 patent teaches the exact method recited in claim 17, namely contacting a test cell which contains an IRS2 promoter linked to a reporter gene and detecting changes in expression. The phrase “such that increased expression of the IRS2

promoter sequence using a substance known to be capable of up-regulating the endogenous IRS2 gene results in an increase in reporter protein levels” merely reports the result, i.e., a substance that increases expression of IRS2. The '701 patent teaches testing a substance that could either increase or decrease expression of IRS2, thus encompasses all of the limitations of claim 17.

Response to Argument under 35 U.S.C. 102(b)

Applicants argue at p. 5, 4th paragraph, that as amended, the claim requires that the test compound identified as a modulator of expression from an IRS2 promoter modulates the activity of IRS2 or an IRS2 containing complex but does not bind to any non-IRS2 protein in the absence of IRS2.

This argument has been fully considered but is not found persuasive. First, the pertinent portion of claim 17 recites:

“b) causing the small molecule to come into contact with IRS2 or a complex comprising IRS2 and other cellular proteins, wherein said small molecule cannot bind to the non-IRS2 proteins in the absence of IRS2;”

It is noted that this limitation can be found in the instant specification at paragraph [0032].

By upregulation of IRS2 function is meant an increase in the amount of IRS2 protein within a cell or enhancing IRS2-mediated signal transduction by activators as defined herein. By activator or inhibitor of IRS2 is meant a small molecule that binds to IRS2 alone and activates or inhibits the signaling function of IRS2, or a small molecule that binds to a complex comprising IRS2 and other cellular proteins and wherein said small molecule cannot bind to the non-IRS2 proteins in the absence of IRS2.

It is clear from the discussion in the specification that the limitation is meant to define the activator of IRS2 that is identified by the claimed method. The claimed method is a

method of identifying a small molecule capable of increasing the level of expression from an IRS2 promoter in a mammalian cell, i.e., the method is a screening assay. In order to determine whether a small molecule is capable of increasing the level of expression of an IRS2 promoter in a mammalian cell, presumably the method steps must be carried out. Therefore, the characteristic of the small molecule identified, namely that it is an activator that binds to IRS2 alone and activates or binds to a complex comprising IRS2 and other cellular proteins and wherein said small molecule cannot bind to the non-IRS2 proteins in the absence of IRS2 is a result of carrying out the claimed method and not a limitation per se. If it is known in advance that a candidate agent already has the characteristic recited in the above-cited portion of part b) of claim 17, then it is not necessary to carry out the methods at all. In summary, since it cannot be known in advance of conducting a screening assay whether a test compound has the attributes that are sought (by carrying out the screening assay), then this new limitation is a result of carrying out the claimed invention and cannot be determined prior to conducting the assay.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The rejection of claim 16 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,858,701 (on Applicants' 1449 form—cited above as “the ‘701 patent”) in view of U.S. Patent No. 5,688,655 (issued 18 November 1997; on Applicant's 1449 form—hereafter “the ‘655 patent”) as set forth at pages 4-8 of the Office action mailed 24 February 2009 is maintained for reasons of record and the following. **In addition, new claims 18-24 are included in this rejection.**

In summary, the limitations of claim 16 are met because the ‘701 patent teaches methods wherein a preparation of cells that “misexpresses” IRS2 (see, for example,

column 4, lines 55-67 to column 5, lines 1-10; column 6, lines 41-57) is used, wherein "misexpression" is defined at column 11, lines 58-60 as including over-expression compared to wild-type. The '701 patent further teaches that a given substance or treatment is administered to said test cell or organism which misexpresses IRS2 and then the effect of the substance or treatment on an aspect of IRS2 metabolism is evaluated. For example, an effect on an aspect of IRS2 metabolism indicates a change in the level of IRS2 phosphorylation, a change in the level of IRS2 binding activity, a change in IRS2 mRNA levels or a change in IRS2 protein levels in preferred embodiments (see column 6, lines 30-33). The only deficiency in the '701 patent is that it does not **explicitly** teach comparison of the results from a test cell population that over-express IRS2 to a control cell population that produce IRS2 at a lower level (or not at all). The '655 patent teaches a method of determining whether a substance is an inhibitor or an activator of a protein, which comprises: a) providing a test cell which overproduces a selected protein relative to a control cell which produces said protein at a lower level (or not at all) in the claims.

Since new claims were included in Applicants' amendment and response, a discussion of how the limitations of the newly added claims is included here. The limitations of new claim 18 are met, because the '701 patent teaches a method for evaluating a treatment, wherein the test compound is contacted with cell that includes a reporter gene functionally linked to an IRS2 promoter (see column 7, lines 11-27). As noted above, claims 19-23 are indefinite (see Rejection under 35 U.S.C. 112, second paragraph), and for the purpose of prior art, the term "host cell" will be interpreted as

referring to the "test cell" of claim 16. Furthermore, for the purpose of prior art, the vague and indefinite "protein" recited in claim 21 will be interpreted as referring to IRS2. Throughout the specification of the '701 patent, the misexpression of IRS2 in test cells is discussed, for example, column 4, lines 55-67 to column 5, lines 1-10; column 6, lines 41-57. Note that "misexpression" is defined at column 11, lines 58-60 as including overexpression compared to wild-type. Because overexpression requires genetic engineering techniques, including introducing a vector into the cell in order to overexpress IRS2, the limitation of claim 19 is met. The limitation of claim 20 is suggested, and therefore, rendered obvious by the '701 patent in their discussion of gene therapy (see columns 25-27 and column 28, lines 1-27). Although the '701 patent discusses the use of retroviral viruses for introducing IRS2 in vivo for gene therapy purposes, it would be obvious to one of ordinary skill in the art that such a technique could also be used for introducing IRS2 into a host cell since such techniques are simpler than in vivo gene therapy and were well known in the art, as evidenced by the '701 patent. The limitations of claims 21-22 are suggested by the discussion at columns 20 (lines 23-67) and 21 (lines 1-9). The '701 patent teaches that 32D myeloid progenitor cells contain no IRS2, thus meeting the limitations of both claim 21 ("host cell essentially does not produce the protein") and 22 ("host cell is a myeloid cell"). Specifically, the '701 patent includes a discussion on the biological importance of IRS2 and IRS-1 in IL-4 and insulin signaling pathways because expression of IRS-1 resulted in increased mitogenesis in these cells and that "by analogy", that IRS2 is also a likely

mediator, thus the '701 patent suggests that these myeloid cells could be used to express IRS2. From column 21, lines 1-27:

IL-4 stimulation activates a number of protein tyrosine kinases, induces tyrosine phosphorylation of cellular proteins like IRS2 and IRS-1, and causes phosphorylation, activation and nuclear translocation of transcription factors, leading to regulating the transcription of genes that are necessary for cell growth or differentiation. However, the linkage between each of these important steps have not been clearly established yet. Since IRS2 is believed to be crucial for IL-4-induced cell proliferation, IRS2 likely plays an important role in this IL-4-signaling network. Modulation (e.g., inhibition or promotion) of IRS2 activity can be used to modulate these effects.

The '701 patent teaches expression of IRS2 in FDC-P1 cells in Figure 1, thus meeting the limitation of claim 23. Finally, new claim 24 recites "the method of claim 16, wherein the modulation of an IRS2 mediated cellular signal is determined by measuring the effect on a component of the IRS2 signaling cascade". There is no specific definition of "IRS2 signaling cascade" in the instant specification, however, IRS2 signaling is discussed throughout the background of the invention; a schematic in Fig. 1; and paragraph [0034] of the specification discloses phosphorylation of IRS2 as part of the IRS2 signaling cascade. The '701 patent discusses IRS2 phosphorylation as a measure of IRS2 metabolism in their description of their method of evaluating the effects of test compounds (see column 6, lines 17-33, for example):

In another aspect, the invention features a method of evaluating an effect of a treatment, e.g., a treatment used to treat an insulin-related disorder, or an immune disorder, or a disorder characterized by unwanted cell proliferation. The method uses a test cell or organism which misexpresses an IRS gene (preferably other than IRS-1). In the case where the misexpressed gene is IRS2 the method includes: administering the treatment to a test cell or organism, e.g., a cultured cell, or a mammal, and evaluating the effect of the treatment on an aspect of IRS2 metabolism. An effect on an aspect of IRS2 metabolism indicates an effect of the treatment. In preferred

embodiments: the insulin-related disorder is an insulin resistant disease; the effect on an aspect of IRS2 metabolism is a change in the level of IRS2 phosphorylation, a change in the level of IRS2 binding activity, a change in IRS2 mRNA levels, a change in IRS2 protein levels.

Hence, the '701 patent discloses a measure of the IRS2 mediated cellular signaling cascade.

Response to Arguments under 35 U.S.C. 103(a)

Applicants argue at p. 6, 2nd paragraph that "as amended, claim 16 recites 'examining the test cell for modulation of an IRS2-mediated cellular signal' and 'accordingly, the rejection of claim 16 is believed moot.'"

This argument has been fully considered but is not found persuasive. A schematic of IRS2-mediated cellular signaling is shown in Fig. 1 and paragraph [0034] of the specification discloses phosphorylation of IRS2 as part of the IRS2 signaling cascade. The '701 patent discusses IRS2 phosphorylation as a measure of IRS2 metabolism in their description of their method of evaluating the effects of test compounds (see column 6, lines 17-33, for example):

In another aspect, the invention features a method of evaluating an effect of a treatment, e.g., a treatment used to treat an insulin-related disorder, or an immune disorder, or a disorder characterized by unwanted cell proliferation. The method uses a test cell or organism which misexpresses an IRS gene (preferably other than IRS-1). In the case where the misexpressed gene is IRS2 the method includes: administering the treatment to a test cell or organism, e.g., a cultured cell, or a mammal, and evaluating the effect of the treatment on an aspect of IRS2 metabolism. An effect on an aspect of IRS2 metabolism indicates an effect of the treatment. In preferred embodiments: the insulin-related disorder is an insulin resistant disease; the effect on an aspect of IRS2 metabolism is a change in the level of IRS2 phosphorylation, a change in the level of IRS2 binding activity, a change in IRS2 mRNA levels, a change in IRS2 protein levels.

Hence, the '701 patent discloses an IRS2-mediated cellular signal and a measure of the IRS2 mediated cellular signaling cascade.

Applicants argue at p. 6, 2nd and 3rd paragraphs that the '655 patent discloses test cells in which a protein is overexpressed, and that results in a "responsive change in a phenotypic characteristic and that the '701 patent does not disclose the responsive change in a phenotypic characteristic of a cell that overproduces IRS2 as taught in the '655 patent and that as a result, the person of ordinary skill would not understand how to use the method disclosed in the '655 patent to identify a compound that modulates IRS2 function.

This argument has been fully considered but is not found persuasive. First, as noted above, the '655 patent taught comparison between a cell that over-expresses a protein of interest and a control cell which produces said protein at a lower level (or not at all) in their claims, so the only deficiency in the '701 patent with regard to claim 16 was the explicit comparison between test and control. Second, the '701 patent strongly suggests that overexpression of IRS2 in a myeloid cell line that does not naturally express IRS1 or IRS2 results in increased proliferation when IL-4 is added (see columns 20, lines 23-67 and 21, lines 1-9). Specifically, the '701 patent includes a discussion on the biological importance of IRS2 and IRS-1 in IL-4 and insulin signaling pathways because expression of IRS-1 in these cells resulted in increased mitogenesis and that "by analogy", that IRS2 is also a likely mediator of IL-4 induced mitogenesis. In summary, a phenotypic characteristic is the observed physical or biochemical characteristics of an organism, and the '701 patent does **suggest** that IRS1, and by analogy, IRS2 expression, in a cell that normally does not express this protein would result in an altered phenotype, namely, increased cell growth in the presence of ligand.

Third, given the teachings of the '701 patent, including the biological importance of IRS2 on cell growth and insulin signaling pathways, the person of ordinary skill in the art would be able to understand how expression of a protein of interest in a test cell would evoke a responsive change in a phenotypic characteristic; this would not be beyond the comprehension of the person of ordinary skill in the art.

Conclusion

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Borgeest whose telephone number is (571)272-4482. The examiner can normally be reached on 9:00am - 3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Stucker can be reached on 571-272-0911. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christina Borgeest

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Primary Examiner, Art Unit 1647